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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/595,089	02/07/2006	Sawako Nakamura	58922US005	2391
32692	7590	06/25/2008		
3M INNOVATIVE PROPERTIES COMPANY				EXAMINER
PO BOX 33427				DESAI, ANISH P
ST. PAUL, MN 55133-3427			ART UNIT	PAPER NUMBER
			1794	
			NOTIFICATION DATE	DELIVERY MODE
			06/25/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<b>Office Action Summary</b>	<b>Application No.</b> 10/595,089	<b>Applicant(s)</b> NAKAMURA, SAWAKO
	<b>Examiner</b> ANISH DESAI	<b>Art Unit</b> 1794

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If no period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 20 February 2008.
- 2a) This action is FINAL.      2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 11-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 11-28 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO/SB/08)  
 Paper No(s)/Mail Date 09/20/07
- 4) Interview Summary (PTO-413)  
 Paper No(s)/Mail Date. \_\_\_\_\_
- 5) Notice of Informal Patent Application
- 6) Other: \_\_\_\_\_

**DETAILED ACTION**

1. Applicant's arguments in response to the Office action dated 08/09/07 and 02/12/08 have been fully considered.
2. Claims 1-10 are cancelled. Claims 11-28 are pending.
3. The restriction requirement mailed on 02/12/08 has been withdrawn in view of Applicant's arguments submitted on 02/20/08. Accordingly all of the pending claims (i.e. claims 11-28) are examined.
4. The 35 USC Section 112-first and second paragraph rejections made by the previous Examiner are withdrawn in view of the present amendment and response.
5. The 35 USC Section 103(a) rejections to claim 11 made by the previous Examiner based on Applicant's admission on page 2 of the specification concerning JP 11-269438 are withdrawn in view of the present amendment and response.
6. A new 35 USC Section 103(a) rejection based on Masaki et al. (JP 10-077308-Machine translation provided by the Examiner) in view of Akihiro et al. (JP H2000-230162-Translation provided by the Examiner) is made.

***Claim Objections***

7. Claim 13 is objected to because of the following informalities: claim 13 recites "The flame-retardant acrylic...flame retardant containing pressure-sensitive adhesive layer". In claim 13, insert "first" between "flame retardant-containing" and "pressure-sensitive adhesive". Appropriate correction is required.
8. Claim 19 is objected to because of the following informalities: This claim recites "wherein the carboxyl group-containing monomer in the **second** mixture is

copolymerized with the alkyl(meth)acrylate monomer in the **second** adhesive mixture".

"second mixture" should be replaced with "first mixture".

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 11 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Masaki et al. (JP 10-077308-Machine translation provided by the Examiner) in view of Akihiro et al. (JP H2000-230162A1-Translation provided by the Examiner).

10. Regarding claim 11, for the purpose of searching for and applying prior art under 35 USC 102 or 103, absent a clear indication in the specification or claims of what the basic and novel characteristics actually are, the recitation "consisting essentially of" will be construed as equivalent to "comprising." (MPEP 2111.03).

11. Masaki discloses a flame-retardant adhesive tape comprising acrylic polymers (abstract). Additionally, the disclosure of Masaki at paragraph 0004-0005 is interpreted as the adhesive tape of Masaki is free of halogen. The disclosure of Masaki at paragraph 0043 is interpreted to read on the halogen free flame-retardant acrylic PSA tape of Masaki comprising a base material and a PSA is disposed on the base material. The acrylic polymer of Masaki is formed of a mixture comprising (a) 50-98 wt% of (meth)acrylic ester monomer ((alkyl)methacrylate) (0070) and (b) **one or more** of

**copolymerizable monomers that is copolymerized with monomer (a) in the amount of 2 to 50 wt%; wherein the monomer (b) can be of carboxyl group containing monomers such as acrylic acid, fumaric acid and/or nitrogen containing monomers such as N-vinyl pyrrolidone (abstract and 0010-0011). Further, paragraph 0060, Example 2 of Masaki discloses PSA formed of acrylic polymer that is formed of a mixture containing units derived from isononyl acrylate (alkyl(meth)acrylate), acrylic acid (carboxyl group-containing monomer), and N-vinyl pyrrolidone (nitrogen-containing monomer).**

12. The difference between the claimed invention and the prior art of Masaki is that Masaki is silent as to teaching 15 to 400 parts by weight of a metal hydrate compound to 100 parts by weight of adhesive as presently claimed. However, Akihiro discloses a flame-retardant PSA tape having high flame resistance and excellent adhesion at the same time without using a halogen based flame-retardant or antimony, both of which have negative impact on the environment and personal safety (see abstract). The adhesive of Akihiro includes flame resistant components such as ammonium polyphosphate and aluminum hydroxide in 8:2 to 3:7 ratio and the total amount of these components is 60 to 150 wt% per 100 parts of the flammable components (see "Solution"-first and second page). Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to add the flame resistant component such as ammonium polyphosphate and aluminum hydroxide (metal hydrate) in the amount taught by Akihiro in the adhesive of Masaki, motivated by the desire to

further enhance the flame-resistance characteristics of the adhesive tape of Masaki and provide an adhesive tape having excellent adhesion.

13. Claims 11-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moon et al. (US 4,988,742) in view of Blance et al. (US 3,632,412) and Akihiro et al. (JP H2000-230162-Translation provided by the Examiner).

14. Regarding claim 11, for the purpose of searching for and applying prior art under 35 USC 102 or 103, absent a clear indication in the specification or claims of what the basic and novel characteristics actually are, the recitation "consisting essentially of" will be construed as equivalent to "comprising." (MPEP 2111.03). Additionally, with respect to claims 12-14 and 19-21, it is noted that these claims do not exclude a PSA tape that has two adhesive layers wherein both adhesive layers are in contact with each other, and wherein both adhesive layers have same composition. Further, claims 12 and 19 do not exclude presence of flame retardant in second PSA layers.

15. Moon discloses an acrylic terpolymer PSA and PSA tapes comprising acrylic terpolymer PSA. Additionally, Moon is silent as to teaching presence of halogen in his/her adhesive tape. Further, at column 8 lines 44-57, Moon discloses a multilayer tape construction wherein coatable composition (i.e. PSA adhesive) are coated to provide a plurality of superimposed layers. Additionally, according to Moon "Tapes of the invention may comprise **more than one pressure-sensitive adhesive layer**. In such multilayer tapes, **the pressure-sensitive layers may comprise similar or different adhesive compositions, in like or unlike thicknesses, having similar or different**

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additives." (column 6 lines 62-67 to column 7 lines 1-3). Thus, Moon contemplates multilayer PSA tapes having similar adhesive compositions wherein the adhesive layers are coated on each other to provide superimposed adhesive layers.

16. Moreover, the adhesive tape of Moon comprises a backing (base material) (column 8 lines 36-43) having a PSA coated on one surface of the backing (column 8 lines 36-43). Further, Moon discloses that other materials such as **fire retardants** can be blended with the adhesive composition of his/her invention (column 7 lines 59-62). With respect to PSA composition, according to Moon "The acrylic terpolymer pressure-sensitive adhesive of the present invention contain an alkyl acrylate monomer, and two polar copolymerizable monomers. The alkyl acrylate monomer is preferably unsaturated acrylate ester of non-tertiary alkyl alcohol, the molecules of which have from 6 to 12 carbon atoms. Included within this class of monomers are, for example, isoctyl acrylate...**The polar copolymerizable monomers are selected such that a first polar monomer** is selected from strongly polar monomers such as **acrylic acid [carboxyl group containing monomer]**, **itaconic acid [carboxyl group containing monomer]**, hydroxylalkyl acrylates, cyanoalkyl acrylates, acrylamides or substituted acrylamides, and **a second polar monomer is selected from either strongly polar monomers such as those listed above, or moderately polar monomers such as N-vinyl pyrrolidone [Nitrogen-containing monomer]**, N-vinyl caprolactam, acrylonitrile, vinyl chloride or diallyl phthalate. **The alkyl acrylate ester preferably comprises from about 60 parts to about 96 parts of the terpolymer, more preferably from about 70 parts about 85 parts.** **The first polar copolymerizable monomer preferably**

**comprises up to about 10 parts. The second polar copolymerizable monomer preferably comprises up to about 20 parts, more preferably from 10 parts to about 15 parts of the photopolymerized terpolymer."** (column 4 lines 65 to column 5 lines 1-26). Additionally, Example 1 of Moon discloses a PSA tape made by photopolymerization of a mixture comprising isoctyl acrylate [alkyl acrylate monomer], acrylic acid [carboxyl group containing monomer], and N-vinylpyrrolidone [Nitrogen-containing monomer].

17. With respect to the claim requirement of alkyl (**meth**)acrylate monomer, it is noted that Moon generally discloses alkyl **acrylate** based monomers, which are believed to be encompassing alkyl (**meth**)acrylate monomers as well. However, the secondary reference of Blance is relied upon to show that it is known in the adhesive art to use alkyl acrylate and alkyl (**meth**)acrylate monomers interchangeably. Blance discloses solvent resistant electrical tapes comprising a backing member coated with a PSA composition which is a polymeric product of (A) an ester of **acrylic or methacrylic acid**, (B) a lower alkyl ester of **acrylic or methacrylic acid**; and (C) a hydroxy bearing monomer (abstract). Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use alkyl (**meth**)acrylate monomer in place of alkyl acrylate monomer, because alkyl (**meth**)acrylate monomer and alkyl acrylate monomer are art recognized equivalent.

18. Moon as modified by Blance is silent as to teaching the metal hydrate compound in the PSA and the amount of metal hydrate compound as claimed in claims 11, 12, 19, and 26-28. However, Akihiro discloses a flame-retardant PSA tape having high flame

resistance and excellent adhesion at the same time without using a halogen based flame-retardant or antimony, both of which have negative impact on the environment and personal safety (see abstract). The adhesive of Akihiro includes halogen free flame resistant components such as ammonium polyphosphate and aluminum hydroxide in 8:2 to 3:7 ratio and the total amount of these components is 60 to 150 wt% per 100 parts of the flammable components (see "Solution"-first and second page). It is noted that the primary reference of Moon desires addition of fire retardants in his/her adhesive but does not specify a specific fire retardant. The reference of Akihiro provides necessary fire retardants (flame retardants) that can be added to PSA. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to add the flame resistant component such as ammonium polyphosphate and aluminum hydroxide (metal hydrate) in the amount taught by Akihiro in the adhesive of Masaki, motivated by the desire to further enhance the flame-resistance characteristics of the adhesive tape of Masaki and provide an adhesive tape having excellent adhesion.

19. As to the claim requirement of the second PSA layer is present on at least a portion of both sides of the flame retardant-containing PSA layer (claims 15-18 and 22-25) and the flame retardant-containing PSA layer is a foam, as stated previously the presently claimed invention do not exclude adhesive layers having same compositions. Further, at column 8 lines 44-57, Moon discloses a multilayer tape construction wherein coatable composition (i.e. PSA adhesive) are coated to provide a plurality of superimposed layers. Additionally, according to Moon "Tapes of the invention may

comprise more than one pressure-sensitive adhesive layer. In such multilayer tapes, **the pressure-sensitive layers may comprise similar** or different adhesive compositions, in like or unlike thicknesses, having similar or different additives." (column 6 lines 62-67 to column 7 lines 1-3). Further, Moon discloses foam like adhesive tapes at column 7 lines 6-30. Based on the disclosure of Moon, the claim limitations of claims 15-18 and 22-25 are obvious optimization for one of ordinary skill in the art.

***Response to Arguments***

20. Applicant's arguments received on 11/08/07 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

21. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

22. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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23. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANISH DESAI whose telephone number is (571)272-6467. The examiner can normally be reached on Monday-Friday, 8:00AM-4:30PM.

24. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carol Chaney can be reached on 571-272-1284. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

25. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/A. D./  
Examiner, Art Unit 1794

/Hai Vo/  
Primary Examiner, Art Unit 1794